

## **Appendix VII**

### **Diamond Drill Core Logs**

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 1

Date: FEB 21, 2001

Location (NTS): 12 B / 7

Hole No: Flat Bay 93 – 101 # 1

UTM Co-ord: N 53 55990, E 3 86625

Spud Date: June. 30, 2001

Elevation 50.0m (164.05')

Logged by: Roland Strickland

Dip at collar Vertical

Drilled by: East Coast Drilling

Total Depth: 500m (1640.5')

Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds	Remarks
143m (469')				Shoe

143.0-153.0m (469.0'-502')				No core recovery
153.0-154.77m (502'-508')	Box 1& 2	<b>Claystone:</b> Predominately red, sticky, very soft, water soluble clay, frequent dark red to red brown to orange brown, interbedded with light green, silty claystone, occasional pebbles and silty intervals up to 0.10m wide, calcareous cemented, occasional varied colored.	Strongly hematitized, occasional calcite veinlets parallel to bedding. Veining with infilled calcite rhombs	Bedding 40°-50° from horizontal.
154.77-155.55m (509'-510')	2	<b>Claystone:</b> Red, sticky, very soft claystone, interbedded with red argillaceous pebbles.	Totally hematitized.	Bedding 30°-40° from horizontal.
155.55-157.92m (510'-518')	3	<b>Claystone:</b> Predominately red, sticky claystone very soft, water soluble, with alternating layers of light green, silty claystone, with frequent feldspar pebbles.	Strongly hematitized, occasional calcite veinlets parallel to bedding. Abundant calcareous cement.	

## AMERICAN RESERVE ENERGY CORPORATION

### FLAT BAY 93 – 101 #1

### DIAMOND DRILL CORE LOG

SHEET # 2

Date: FEB 21, 2001

Location (NTS): 12 B / 7

Hole No: Flat Bay 93 – 101 #1

UTM Co-ord: N 53 55990, E 3 86625

Spud Date: June. 30, 2001

Elevation 50.0m (164.05')

Logged by: Roland Strickland

Dip at collar Vertical

Drilled by: East Coast Drilling

Total Depth: 500m (1640.5')

Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds	Remarks
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157.92-158.42m (518'-520')	Box 4	<b>Claystone:</b> Predominately massive, red, sticky, very soft, water soluble claystone	Well developed slickensides, parallel to bedding @160.66m.	
158.42-158.92m (520'-521')	4	<b>Sandstone:</b> Red, orange yellow, light green, medium to coarse grained, moderately sorted, subrounded, predominately quartz, hard to friable, consolidated with calcareous cement, arkosic, occasionally conglomeratic with brecciated fragments of quartz and orange feldspar.	Strong calcareous cement. Totally hematitized.	Loss 2.24m of core because of the friability. Increased viscosity to prevent losses.
158.92-161.16m (521'-529')				Loss core.
161.16-161.84m (529'-531')	4	<b>Claystone:</b> Red , yellow -brown, rare dark gray, sticky, very soft, unconsolidated.	Strong calcareous cement. Totally hematitized.	
161.84-162.34m (531'-533')	4	<b>Gypsum:</b> White, massive to powdery gypsum, occasionally crystalline, very firm.		

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 3

Date: FEB 21, 2001

Location (NTS): 12 B / 7  
UTM Co-ord: N 53 55990, E 3 86625  
Elevation 50.0m (164.05')  
Dip at collar Vertical  
Total Depth: 500m (1640.5')

Hole No: Flat Bay 93 – 101 # 1  
Spud Date: June. 30, 2001  
Logged by: Roland Strickland  
Drilled by: East Coast Drilling  
Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds	Remarks
162.34-162.58m (533'-533.4')	4	<b>Anhydrite:</b> White, slightly blue -gray, massive, very firm to brittle, fibrous, occasionally coarse crystalline, glassy appearance, slightly mottled, minor red-gray gypsum.		

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 4

Date: May 29, 2001

Location (NTS): 12 B / 7

Hole No: Flat Bay 93 – 101 # 1

UTM Co-ord: N 53 55990, E 3 86625

Spud Date: June. 30, 2001

Elevation 50.0m (164.05')

Logged by: Roland Strickland

Dip at collar Vertical

Drilled by: East Coast Drilling

Total Depth: 500m (1640.5')

Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds	Remarks
162.58-169.03m (533.4'-555')	5	<b>Anhydrite:</b>	At	
	6	White, slightly blue –gray, massive, very firm to brittle, fibrous, occasionally coarse crystalline, glassy appearance, slightly mottled, minor red-gray gypsum, occasional calcite crystals	164.59m(540') voids infilled with calcite crystals. Red hematite staining and calcareous cement throughout.	
		@ 166.8m(547') to 168.12m(552') brecciated anhydrite fault zone.	brecciated, infilled with dark grey mud + crystalline gypsum, strongly calcareous.	Hematitized with calcite veinlets. <b>Loss 1.38m(4.5')</b> <b>core @ 166.31m(546')</b>
		@ 168.12m(552') to 169.03m(555') <b>Anhydrite:</b> same as above, white, off white, glassy, crystalline.		

169.03-170.55m (555'-560')	7	<b>Mudstone:</b> red brown, with light green slightly calcareous, occasional white gypsum stringers		Bedding 40°-50° from horizontal.
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**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 5

Date: May 29, 2001

Location (NTS): <u>12 B / 7</u>	Hole No: <u>Flat Bay 93 – 101 # 1</u>
UTM Co-ord: <u>N 53 55990, E 3 86625</u>	Spud Date: <u>June. 30, 2001</u>
Elevation <u>50.0m (164.05')</u>	Logged by: <u>Roland Strickland</u>
Dip at collar <u>Vertical</u>	Drilled by: <u>East Coast Drilling</u>
Total Depth: <u>500m (1640.5')</u>	Core Size: <u>NQ</u>

Depth	Box	Lithology Description	Faults / Folds	Remarks
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170.55-184.64m (560'-606')	7	<b>Anhydrite:</b> White, slightly blue -gray, massive, very firm to brittle, fibrous, occasionally coarse crystalline, glassy appearance, slightly mottled, minor red-gray gypsum, occasional calcite crystals.	<b>Loss 0.46m(1.5')</b> <b>core @</b> <b>172.40m(566')</b>
	8	Occasional red stylolitic mud seams @	
	9	178.25m(585')	
	10	Dark grey shale lenses @ 174.09m(571') 0.15m(0.07') thick.	
	11	White glassy crystalline calcite @ 180.13m(591') 3mm thick.	
	12	Red brown mud seam @ 181.59m(596') 4cm thick.	
184.64-205.25m (606'-673')	12	Dark grey shale lense @ 181.86m(597') 3mm thick.	<b>Loss 4.0m(13.1')</b> <b>core @</b> <b>178.25m(585')</b>
	12	<b>Halite:</b> clear, transparent - translucent, glassy, hard, crystalline, white, occasionally granular. Abundant white crystalline calcite with minor white-tan gypsum and blue white anhydrite. Drilling mud and calcite grains from core barrel @ 190m(623') had trace slow yellow cut florescence. Only retrieved 1.3m(4.26') of core. Assumed Halite core washed away.	
			Bedding 30°-40° from horizontal.
			Loss circulation @ 188m(605') Gas units from 192m(630')-196m(643') increased from 36 to 170units. <b>Loss</b> <b>19.31m(63.0')</b> <b>core @ 184.64m-205.25m(606'-673')</b> Drilling ahead with fresh water.

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 - 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 6

Date: May 18, 2001

Location (NTS): 12 B / 7  
UTM Co-ord: N 53 55990, E 3 86625  
Elevation: 50.0m (164.05')  
Dip at collar: Vertical  
Total Depth: 500m (1640.5')

Hole No: **Flat Bay 93 - 101 # 1**  
Spud Date: June. 30, 2001  
Logged by: Roland Strickland  
Drilled by: East Coast Drilling  
Core Size: NQ



Depth	Box	Lithology Description	Faults / Folds	Remarks
205.25-217.25m (673'-713')	12	<p>No core recovery after 205.25m(673')</p> <p><b>Calcite:</b> loose grains, predominately coarse granular, white, tan, hard, occasionally crystalline aggregates, trace nodular, trace vitreous luster.</p> <p>From 206.13-214.25m(676'-703') tan, brown, off white, grains of calcite, occasional rhombs.</p>		<p>Loss core 205.25-220m(673'-722').</p> <p>Drilling ahead with fresh water.</p> <p>Halite core assumed washed away.</p>

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 7

Date: July 18, 2001

Location (NTS): 12 B / 7

Hole No: Flat Bay 93 – 101 # 1

UTM Co-ord: N 53 55990, E 3 86625

Spud Date: June. 30, 2001

Elevation 50.0m (164.05')

Logged by: Roland Strickland

Dip at collar Vertical

Drilled by: Petro Drilling

Total Depth: 500m (1640.5')

Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds Alterations	Remarks
217.25-221.95m (713'-728')	14	No core recovery.		
221.95-223.3m (728'-733')	14	<b>Halite:</b> clear to translucent, glassy, hard, crystalline, white, occasionally granular, calcareous cement, frequent blebs of gypsum.		
223.3-226m (733'-741')	15	No core recovery.		
226m-239.9m (741'-787')	15 16 17 18 19 20	<b>Halite:</b> clear to translucent, glassy, hard, crystalline, white, occasionally granular, calcareous cement, frequent blebs of gypsum. From 235m-235.35m dark black staining from disseminated fine grained pyrite. From 235.76m-236.15m black staining from disseminated fine grained pyrite. From 239.21m-239.48m black staining from disseminated fine grained pyrite. Frequent blebs of gypsum with calcareous cement throughout.		100% core recovery: excellent quality

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 8

Date: July 19, 2001

Location (NTS):	<u>12 B / 7</u>	Hole No:	<u>Flat Bay 93 – 101 # 1</u>
UTM Co-ord:	<u>N 53 55990, E 3 86625</u>	Spud Date:	<u>June. 30, 2001</u>
Elevation	<u>50.0m (164.05')</u>	Logged by:	<u>Roland Strickland</u>
Dip at collar	<u>Vertical</u>	Drilled by:	<u>Petro Drilling</u>
Total Depth:	<u>500m (1640.5')</u>	Core Size:	<u>NQ</u>

Depth	Box	Lithology Description	Faults / Folds Alterations	Remarks
239.9m-242.9m (787'-797')	21	<b>Halite:</b> clear to translucent, glassy, hard, crystalline, white, occasionally granular, calcareous cement, frequent blebs of gypsum. From 240.59m-241.00m black staining from disseminated fine grained pyrite.		100% core recovery: excellent quality
	22			
242.9m-243.4m (797'-799')	22	<b>Claystone:</b> Predominately red, sticky claystone soft, with occasional feldspar pebbles, highly hematitized with halite lenses throughout.		100% core recovery: excellent quality
243.4m-254.9m (799'-836')	23	<b>Halite:</b> clear to translucent, glassy, hard, crystalline, frequently massive, white, occasionally granular, minor calcareous cement, frequent blebs of anhydrite		
	24	From 246.69m-247.43m black staining from disseminated fine grained pyrite		
	25	and frequent red iron oxide staining.		
	26			
254.9m-255.5m (836'-838')	27	<b>Anhydrite:</b> white, slightly blue-gray, massive, very firm to brittle, fibrous, occasionally coarse crystalline, glassy appearance, slightly mottled, minor red-gray gypsum, occasional calcite crystals.		
	27			

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 9

Date: July 19-20, 2001

Location (NTS): 12 B / 7

Hole No: **Flat Bay 93 – 101 # 1**

UTM Co-ord: N 53 55990, E 3 86625

Spud Date: June. 30, 2001

Elevation 50.0m (164.05')

Logged by: Roland Strickland

Dip at collar Vertical

Drilled by: Petro Drilling

Total Depth: 500m (1640.5')

Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds Alterations	Remarks
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255.5m-272.5m (838'-894')	28 29 30 31 32 33 34 35	<b>Halite:</b> clear to translucent, glassy, hard, crystalline, frequently massive, white, occasionally granular, minor calcareous cement, frequent blebs of anhydrite From 268.00m-268.89m black staining from disseminated fine grained pyrite and frequent red iron oxide staining. Grey stringers of shale from 256.18m – 256.52m.	100% core recovery: excellent quality
272.5m-275.1m (894'-903')	35 36	<b>Claystone:</b> Predominately red-brown, grey-green, soft-medium hard, interbedded halite lenses up to 4 cm thick, frequently hematitized, strong calcareous cement	Bedding 40° from horizontal.
275.1m-328.9m (903'-1079')	37 38 39 40 41 42 43 44 45 to  60	<b>Halite:</b> clear to translucent, glassy, hard, coarse crystalline, predominately massive, white, occasionally granular, minor calcareous cement, occasional blebs of anhydrite Red, grey-green claystone – shale @ 301.37m to 301.64m. Minor red-brown hematitization.	100% core recovery: excellent quality

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 10

Date: July 21-22, 2001

Location (NTS): 12 B / 7  
UTM Co-ord: N 53 55990, E 3 86625  
Elevation 50.0m (164.05')  
Dip at collar Vertical  
Total Depth: 500m (1640.5')

Hole No: Flat Bay 93 – 101 # 1  
Start Date: July. 15, 2001  
Logged by: Roland Strickland  
Drilled by: Petro Drilling  
Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds Alterations	Remarks
328.9m-409.5m (1079'-1344')	61 to 96	<b>Halite:</b> clear to translucent, glassy, hard, coarse crystalline, predominately massive, occasional white, granular, minor calcareous cement, occasional blebs of anhydrite Broken core at 355.58-356.97m, 374.55-376.30m, 391.00-391.60m		100% core recovery: excellent quality
409.5m-413.5m (1344'-1357')	96 97 98	<b>Anhydrite:</b> white, slightly blue-gray, massive, very firm to brittle, fibrous, occasionally coarse crystalline, glassy appearance, slightly mottled, occasional calcite crystals.	Small scale plastic deformation.	Bedding 10° -15° from horizontal.
413.5m-438.9m (1357'-1440')	98 to 109	<b>Halite:</b> clear to translucent, glassy, hard, coarse crystalline, predominately massive, occasional white, granular, minor calcareous cement, occasional blebs of anhydrite		100% core recovery: excellent quality

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 11

Date: July 23, 2001

Location (NTS): 12 B / 7

Hole No: Flat Bay 93 – 101 # 1

UTM Co-ord: N 53 55990, E 3 86625

Start Date: July 15, 2001

Elevation 50.0m (164.05')

Logged by: Roland Strickland

Dip at collar Vertical

Drilled by: Petro Drilling

Total Depth: 500m (1640.5')

Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds Alterations	Remarks
413.5m-440.4m (1357'-1445')	110	<b>Halite:</b> clear to translucent, glassy, hard, coarse crystalline, predominately massive, occasional white, granular, minor calcareous cement, occasional blebs of anhydrite		100% core recovery: excellent quality
440.4m-456.4m (1445'-1497')	110 to 117	<b>Anhydrite:</b> white, blue-gray, massive, very firm to brittle, fibrous, occasionally coarse crystalline, glassy appearance, slightly mottled, occasional calcite crystals. Two (2) cm grey shale lense @ 442m Vertical salt lense 10mm wide 451.1-451.6m 45° salt lense 2 cm wide @ 454.6m 45° salt lense 2 cm wide 455.4-455.6m		Bedding 30° –46° from horizontal.
456.4m-478.0m (1497'-1568')	117 to 127	<b>Halite:</b> clear to translucent, glassy, hard, coarse crystalline, predominately massive, occasional white, granular, minor calcareous cement, frequent white blebs & stringers of anhydrite. At 456.4-465.72m massive coarse crystalline salt.		100% core recovery: excellent quality
478.0m-503.9m (1568'-1653')	127 to 138	<b>Anhydrite:</b> blue-gray, white, massive, hard, very firm to brittle, fibrous, occasionally coarse crystalline, glassy appearance, slightly mottled, occasional calcite crystals.		Bedding 10° –30° from horizontal. Very high grade. Possibly lower portion of the evaporite basin

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 12

Date: July 24-25, 2001

Location (NTS): 12 B / 7

Hole No: Flat Bay 93 – 101 # 1

UTM Co-ord: N 53 55990, E 3 86625

Start Date: July. 15, 2001

Elevation 50.0m (164.05')

Logged by: Roland Strickland

Dip at collar Vertical

Drilled by: Petro Drilling

Total Depth: 500m (1640.5')

Core Size: NQ

Depth	Box	Lithology Description	Faults / Folds Alterations	Remarks
503.9m-582.5m (1653'-1911')	139  to  165  to  173	<b>Anhydrite:</b> blue-gray, white, massive, hard, very firm to brittle, fibrous, frequently coarse crystalline, glassy appearance, slightly mottled. Poor porosity. Saturated with light brown Oil staining, bright yellow florescence throughout, frequent streaming blue-yellow cut florescence. Occasional light brown oil staining from 557.9-582.4m		Bedding 0° -10° from horizontal. Very high grade. Possibly lower portion of the evaporite basin       Bedding 20° -30° from horizontal.
582.5m-606.6m (1911'-1990')	173  to  184	<b>Halite:</b> clear to translucent, glassy, hard, coarse crystalline, predominately massive, occasional white, granular, minor calcareous cement, frequent white blebs & stringers of anhydrite. Frequent stylotitic structures filled with HYDC, giving yellow florescence. Occasional chicken -wire like texture filled with calcareous grey shale Continuous parallel veinlets of anhydrite + frequent blebs & layers 0.3-0.9mm wide. Dark brown impurities throughout, possibly hydc staining. From 592.00-592.08 white anhydrite From 593.62-593.88 increase in anhydrite lenses. Abundant yellow florescence throughout.		Bedding 20° -30° from horizontal.



**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 13

Date: July 25-26, 2001

Location (NTS): <u>12 B / 7</u>	Hole No: <u><b>Flat Bay 93 – 101 # 1</b></u>
UTM Co-ord: <u>N 53 55990, E 3 86625</u>	Start Date: <u>July 15, 2001</u>
Elevation <u>50.0m (164.05')</u>	Logged by: <u>Roland Strickland</u>
Dip at collar <u>Vertical</u>	Drilled by: <u>Petro Drilling</u>
Total Depth: <u>500m (1640.5')</u>	Core Size: <u>NQ</u>

Depth	Box	Lithology Description	Faults / Folds Alterations	Remarks
606.6m-643.0m (1911'-2110')	184	<b>Anhydrite:</b> white, blue-gray, massive, hard, very firm to brittle, fibrous, frequently coarse crystalline, glassy appearance, slightly mottled. Frequent veinlets of grey calcareous shale. Shale lens 2.5cm @ 606.7m. Occasional light brown Oil staining, bright yellow florescence throughout. Shale (dark grey) laminae 8mm wide @ 623.86m, from 632.2-636.3m. From 639.4m-640.0m up to 10mm wide dark grey calcareous Shale.		Bedding 20°–30° from horizontal.  Bedding 30° from horizontal.  Bedding 30°–40° from horizontal.

**AMERICAN RESERVE ENERGY CORPORATION**  
**FLAT BAY 93 – 101 #1**  
**DIAMOND DRILL CORE LOG**

SHEET # 13

Date: July 25-26, 2001

Location (NTS): <u>12 B / 7</u>	Hole No: <u><b>Flat Bay 93 – 101 # 1</b></u>
UTM Co-ord: <u>N 53 55990, E 3 86625</u>	Start Date: <u>July. 15, 2001</u>
Elevation <u>50.0m (164.05')</u>	Logged by: <u>Roland Strickland</u>
Dip at collar <u>Vertical</u>	Drilled by: <u>Petro Drilling</u>
Total Depth: <u>500m (1640.5')</u>	Core Size: <u>NQ</u>

Depth	Box	Lithology Description	Faults / Folds Alterations	Remarks
606.6m-658.7m (1911'-2161')	184  to  207	<b>Anhydrite:</b> white, blue-gray, massive, hard, very firm to brittle, fibrous, frequently coarse crystalline, glassy appearance, slightly mottled. Frequent veinlets of grey calcareous shale. Shale lens 2.5cm @ 606.7m. <del>Occasional light brown Oil staining, bright yellow florescence throughout.</del> Shale (dark grey) laminae 8mm wide @ 623.86m, from 632.2-636.3m. From 639.4m-640.0m up to 10mm wide dark grey calcareous Shale. From 643.0-658.7m increase in overall calcareous shaly limestone. Shale lenses 10-25mm wide from 645.5m – 647.5m		Bedding 20° –30° from horizontal.  Bedding 30° from horizontal.  Bedding 30° –40° from horizontal.  Bedding 20° –30° from horizontal.
658.7m-660.94 (2161'-2169')	207 to 209	<b>Limestone: (Ship Cove Formation)</b> <b>Limestone:</b> dark grey to grey, micro-crystalline to crystalline, hard, laminated, slightly brecciated, algae-stromatolitic structure, occasional moldic porosity, trace bright yellow florescence, with occasional streaming yellow cut-florescence. <b>Anhydrite</b> is interbedded with limestone mainly in a sharp conformable contact, mainly a chicken – wire texture of shaly – limestone. <b>Strong yellow florescence throughout.</b> Shaly-limestone lenses up to 4 cm wide from 658.77m to 660.94m.		Bedding 20° –30° from horizontal.